

CLAIMS

1. A method of fabricating an active plate comprising pixel electrodes and associated address lines formed from a transparent conductive material, which method comprises:

providing a transparent conductive material layer and a metal layer in succession over a substrate,

depositing and patterning a shielding layer into a configuration corresponding to the desired pattern of the transparent conductive layer required for the pixel electrodes and the address lines, the shielding layer being formed in a manner such that an etching property of the shielding layer at regions corresponding to the pixel electrodes differs from that at the regions corresponding to the address lines,

subjecting the shielding layer to an etching process using the difference in properties so as to remove the regions of the shielding layer corresponding to the pixel electrodes while leaving portions of the shielding layer at the regions corresponding to the address lines,

and thereafter removing the portions of the metal layer at the regions corresponding to the pixel electrodes.

2. A method according to Claim 1, characterised in that the property of the shielding layer which differs comprises the thickness of the layer, in that the regions of the shielding layer corresponding to the pixel electrodes comprise thinner regions, and in that the step of etching the shielding layers comprises a partial etch to remove the thinner shielding layer regions.

3. A method according to Claim 2, characterised in that the shielding layer comprises photoresist.

4. A method according to Claim 3, characterised in that the shielding layer is patterned using a photomask comprising areas which result

in partial exposure of the photoresist material at the regions corresponding to the pixel electrodes to produce areas of reduced thickness at these regions.

5 5. A method according to Claim 1 characterised in that the transparent conductive material comprises a transparent metal oxide.

10 6. A method according to Claim 1, characterised in that TFTs are formed on the substrate in association with the pixel electrodes and address lines, and in that portions of the transparent conductive layer are used to provide source and drain contacts for the TFTs which portions are defined by regions of the patterned shielding layer.

15 7. A method according to Claim 1 for forming the active plate of an active matrix liquid crystal display device.

8. A method of manufacturing an active plate for a liquid crystal display, comprising:

depositing and patterning a gate conductor layer over an insulating substrate;

20 depositing a gate insulator layer over the patterned gate conductor layer;

depositing a silicon layer over the gate insulator layer;

depositing a transparent conductor layer over the substrate;

depositing a metal layer over the transparent conductor layer;

25 depositing and patterning an etchable shielding layer over the metal layer, the shielding layer having a configuration defining source and drain areas, pixel electrode areas, and line conductor areas associated with the source or drain conductors, the regions of the shielding layer defining the line conductor areas having a thickness greater than that of the regions defining the pixel electrodes;

30 patterning the transparent conductor layer and the metal layer using the shielding layer;

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partially etching the shielding layer to remove the thinner regions so as to expose the metal layer at the pixel electrode regions;
and removing the metal layer regions at the pixel electrode regions.

5 9. A method according to Claim 8, characterised in that the silicon layer is patterned prior to the deposition of the transparent conductor layer by a self-aligned process using the gate conductor layer.

10 10. A method according to Claim 8, characterised in that the shielding layer comprises photoresist.

11. An active matrix liquid crystal display device comprising an active plate according to Claim 8, a passive plate, and a layer of liquid crystal material sandwiched between the active and passive plates.

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